AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical code reading system comprising:

an optical code reader having associated circuitry housed within a housing;

an imaging engine having at least one image sensor and configured and dimensioned to fit within a predetermined form factor of the optical code reader;

an interface for interfacing said imaging engine with said circuitry housed within said housing of said optical code reader;

a first illumination assembly including at least one illuminating device for illuminating an optical target during a first illuminating period; and

a second illumination assembly including at least one illuminating device for illuminating said optical target during a second illuminating period, at least one of the first and second illumination assemblies is located externally and at a distance from said housing and communicates with said circuitry of said optical code reader.

2. (Original) The optical code reading system of claim 1, wherein the second illuminating period is less than, equal to, or greater than the first illuminating period.

3. (Original) The optical code reading system of claim 1, wherein the second illuminating period corresponds to a portion of the first illuminating period such that said optical

target is simultaneously illuminated by said first and second illumination assemblies during the first illuminating period.

4. (Original) The optical code reading system of claim 1, wherein the imaging engine includes a transmissive optical element located on a face of said imaging engine.

5. (Original) The optical code reading system of claim 1, wherein said imaging engine is an integrated circuit package.

6. (Original) The optical code reading system of claim 1, wherein said imaging engine and at least one of the first and second illumination assemblies are formed as an integrated circuit package.

7. (Original) The optical code reading system of claim 1, further comprising another imaging engine configured and dimensioned to fit within the predetermined form factor for being interchanged with the imaging engine.

8. (Original) The optical code reading system of claim 1, wherein the at least one illuminating device of the second illumination assembly is a flash-type illumination module.

9. (Currently Amended) The optical code reading system of claim 1, wherein said at least one of said first and second illumination assemblies [[is]] located externally ~~located~~ from said optical code reader communicates via a wireless connection with said circuitry.

10. (Original) The optical code reading system of claim 1, wherein the at least one illuminating device of at least the first and second illumination assemblies includes a first illuminating device and a second illuminating device, wherein the first and second illuminating devices provide different output wavelengths.

11. (Original) The optical code reading system of claim 1, wherein activation and deactivation of at least one of the first and second illumination assemblies is controlled according to at least one of a plurality of factors during an imaging procedure.

12. (Original) The optical code reading system of claim 1, wherein the at least one illuminating device of at least one the first and second illumination assemblies includes a plurality of illuminating devices and at least one flash-type illumination module.

13. (Original) The optical code reading system of claim 1, wherein activation of the at least one illuminating device of at least the first and second illumination assemblies is controlled to provide an output beam having a predetermined intensity.

14. (Original) The optical code reading system of claim 1, wherein the at least one illuminating device of at least the first and second illumination assemblies includes a plurality of light-emitting diodes forming at least one diode cluster.

15. (Original) The optical code reading system of claim 14, wherein the at least one diode cluster includes a first diode cluster and a second diode cluster, and wherein said first and

second diode clusters are activated and deactivated at predetermined times for providing a predetermined intensity of an output beam.

16. (Currently Amended) An imaging engine configured and dimensioned to fit within a predetermined form factor of an optical code reader, said imaging engine comprising:

an imaging assembly including at least one image sensor;

an interface for interfacing said imaging assembly with circuitry of said optical code reader when provided within said predetermined form factor of said optical code reader;

a first illumination assembly including at least one illuminating device for illuminating an optical target during a first illuminating period; and

a second illumination assembly including at least one illuminating device for illuminating said optical target during a second illuminating period, said first and second illumination assemblies respectively emit a first and a second output beam for illuminating said optical target, synchronization of said output beams being controlled by said circuitry of said optical code reader.

17. (Original) The imaging engine of claim 16, wherein the imaging engine includes a transmissive optical element located on a face of said imaging engine.

18. (Original) The imaging engine of claim 16, wherein said imaging engine is an integrated circuit package.

19. (Original) The imaging engine of claim 16, wherein the at least one illuminating device of the second illumination assembly is a flash-type illumination module.

20. (Original) The imaging engine of claim 16, wherein the at least one illuminating device of at least the first and second illumination assemblies includes a first illuminating device and a second illuminating device, wherein the first and second illuminating devices provide different output wavelengths.

21. (Original) The imaging engine of claim 16, wherein activation and deactivation of at least one of the first and second illumination assemblies is controlled according to at least one of a plurality of factors during an imaging procedure.

22. (Original) The imaging engine of claim 16, wherein the at least one illuminating device of at least one the first and second illumination assemblies includes a plurality of illuminating devices and at least one flash-type illumination module.

23. (Original) The imaging engine of claim 16, wherein activation of the at least one illuminating device of at least the first and second illumination assemblies is controlled to provide an output beam having a predetermined intensity.

24. (Original) The imaging engine of claim 16, wherein the at least one illuminating device of at least the first and second illumination assemblies includes a plurality of light-emitting diodes forming at least one diode cluster.

25. (Original) The imaging engine of claim 24, wherein the at least one diode cluster includes a first diode cluster and a second diode cluster, and wherein said first and second diode clusters are activated and deactivated at predetermined times for providing a predetermined intensity of an output beam.

26. (Withdrawn) A method for controlling illumination of an optical target comprising the steps of:

determining at least one factor or parameter selected from the group consisting of ambient lighting, type of optical target, distance to the optical target, texture of a surface the optical target is imprinted on, an illuminating direction of at least one illumination assembly, wavelength of at least one output illuminating beam, and maximum output intensity of at least one illuminating device of said at least one illumination assembly; and

controlling activation and deactivation of said at least one illuminating device according to the at least one determined factor or parameter for illuminating said optical target.

27. (Withdrawn) The method of claim 26, further comprising the following steps prior to the controlling step:

determining duration of at least one illuminating period of said at least one illuminating device; and

determining illumination intensity of at least one output beam of said at least one illuminating device.

28. (Withdrawn) The method of claim 27, wherein the controlling step comprises the step of controlling activation and deactivation of the at least one illuminating device for emitting the at least one output beam for illuminating said optical target for a period equal to the at least one illuminating period and at the determining illumination intensity.

29. (Withdrawn) The method of claim 26, wherein the at least one illuminating device includes a plurality of light-emitting diodes forming at least one diode cluster, and wherein said controlling step comprises the step of controlling activation of at least one of said at least one diode cluster according to said determining step.

30. (Withdrawn) The method of claim 26, wherein the at least one illuminating device includes at least one flash-type illumination module and a plurality of light-emitting diodes, and wherein said controlling step comprises the step of controlling activation of at least one of said at least one flash-type illumination module and said plurality of light-emitting diodes according to said determining step.